



NORTHERN ARIZONA UNIVERSITY American Indian Air Quality Training Program



Institute for Tribal Environmental Professionals

NATIONAL TRIBAL FORUM ON AIR QUALITY 2015

Vol. XXII, #3, 2015

May in Battle Creek, MI, continued a sixteen-year history of excellence. The Forum also broke new ground, with close to 200 people (the largest NTF showing ever) attending the yearly gathering of tribal air quality professionals and those who support their work.

NTFAQ 2015 was held at Firekeepers Casino Hotel, a modern, spacious facility owned and operated by this year's Forum host, the

Nottawaseppi Huron Band of Potawatomi, whose Pine Creek Reservation lies just south of Battle Creek. Attendees expressed numerous compliments on the quality of their experience at Firekeepers and the graciousness of our host.

The tribe provided a fine



One forum highlight was a dinner for attendees, supplied by our host tribe, that featured a top-notch Great Lakes-style mini-pow wow, with pro dancers and Southern Straight Drum.



Nottawaseppi Tribal Chairman, Homer A. Mandoka, greets the forum crowd and expresses the importance of environmental stewardship.

location and great generosity, supplying forum attendees with quality meals, a tour of the tribal community, and a performance by talented pow wow dancers and drummers who delighted the crowd with song and energy. We extend our heartfelt thanks to the tribe for their welcoming spirit and excellent treatment of our Forum guests.

NTFAQ 2015 brought together tribal air professionals representing a wide range of knowledge and experience, along with federal and state air-quality staff, private-industry representatives, members of academia and

non-governmental organizations, and others. The attendee mix has always been one of the Forum's great strengths, stimulating creative

see FORUM on page 4



Keynote speaker Winona LaDuke is presented with a robe by ITEP Exec. Director, Ann Marie Chischilly.

IN THIS ISSUE

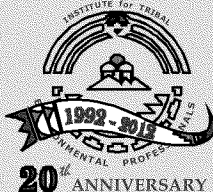
- p. 1: National Tribal Forum '15
- p. 2: From the Exec. Director
- p. 3: Virgil Masayesva Awards
- p. 4: Upcoming Courses
- p. 8: Intro to Tribal Air Quality
- p. 9: Interview with Pat Ellsworth
- p. 10: Climate Change Adaptation
- p. 11: Solar Energy Workgroup
- p. 13: Tribal Forum Gallery

From the Executive Director

Ann Marie Chischilly



Institute for Tribal Environmental Professionals Northern Arizona University



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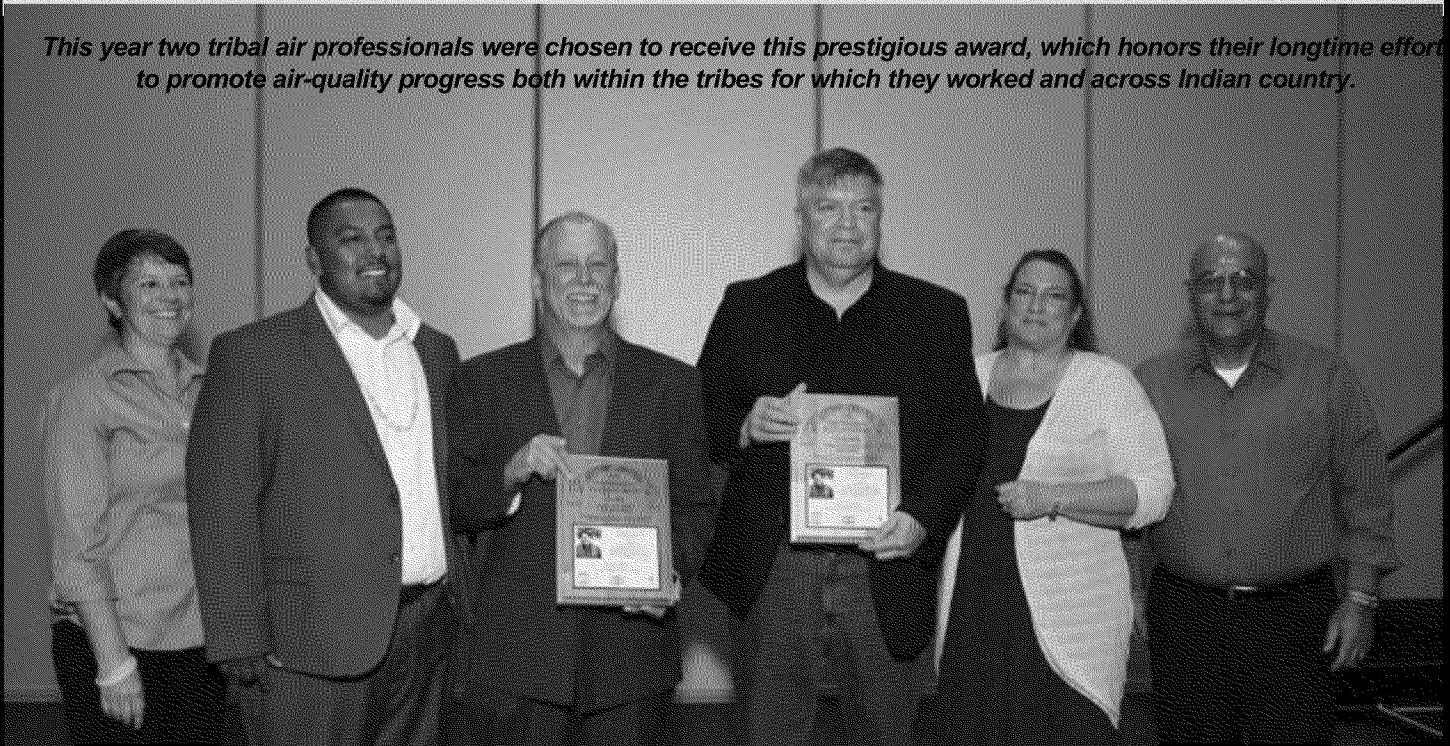
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2015 Virgil Masayesva Tribal Air Programs Excellence Awards

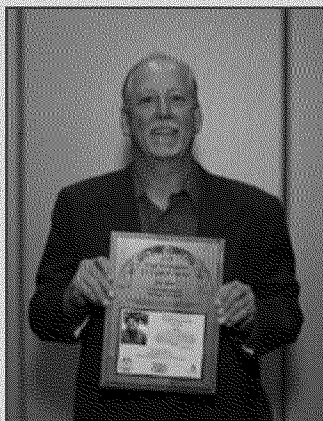
This year two tribal air professionals were chosen to receive this prestigious award, which honors their longtime effort to promote air-quality progress both within the tribes for which they worked and across Indian country.



Dan Blair, former Air Program Director, Gila River Indian Community, AZ

Randy Ashley, Air Quality Program Manager, Confederated Salish and Kootenai Tribes, MT

When Dan Blair assumed his duties as air quality specialist (he recently retired as Air Quality Compliance and Enforcement Manager) for the not-yet-launched air program at the Gila River Indian Community in 1997, he realized he had some adjusting to do. Coming



from his role as a Lead Air Pollution Investigator for Arizona's Maricopa County (which borders the reservation), he was used to operating amid a fully staffed air department that included stack-testers, small- and major-source experts, numerous investigators, and a full support staff. At GRIC he was the

program was still in its planning stage.

Anyone who knows Dan understands this was a challenge

A member of the tribal air community's "old guard," Air Quality Program Manager Randy Ashley is this year's co-winner of the Virgil Masayesva Tribal Air Programs Excellence Award. Randy has been working to protect air



quality over the Confederated Salish and Kootenai Reservation in west-central Montana since 1998. But his efforts on behalf of the tribal air community extend nationwide.

Much of Randy's work at CSKT revolves around two PM₁₀ monitors on the reservation as well as a regional IMPROVE site focused primarily on regional haze. Beyond his duties with the tribes, Randy has had plenty on his plate over the years, managing local

tasks while participating in an array of national and regional tribal air efforts. Among his "extra-curricular" activities: his

See BLAIR on page 7

See ASHLEY on page 7

Upcoming AIAQTP Courses (FY16)

For a complete list of upcoming courses, visit:

www4.nau.edu/itep/air/training_aq.asp

or contact:

AIAQTP Coordinator

at Northern Arizona University

Dates and locations can change. For updates, visit: www4.nau.edu/itep/air/training_aq.asp

FORUM - from front page



see FORUM on page 5

U.S. EPA Tribal Air Contacts

To contact U.S. EPA's Tribal Air support staff, visit the web at:

www.epa.gov/air/tribal/coordinators.html

ITEP on the Web

From our home page you'll find links to ITEP programs, info on upcoming events, training and support opportunities, and newsletters to keep you informed on our work in a variety of media.

Visit us at:

www.nau.edu/itep



Bill Thompson (center), who has been serving as EPA Sr. Tribal Advisor for indoor air and radiation issues, was robed by ITEP and EPA staff to honor his work on behalf of tribes.

see FORUM on page 6



Right: Noted activist-author-farmer Winona LaDuke offered Forum attendees her lively take on living independently and keeping alive the passion and tenacity needed to fight for social justice, in a world where larger forces sometimes seem to big to resist.



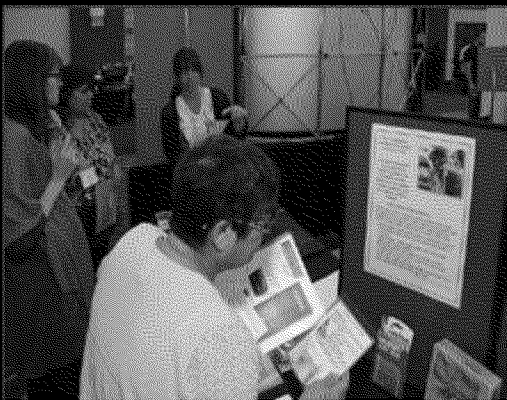
Left: Keynote speaker Lee Sprague, whose activism on behalf of Native communities is recognized throughout Indian country, accepts a gift from ITEP Exec. Dir., Ann Marie Chischilly.



Bill Thompson, NTAA Chair and Vice-Chief of the Penobscot Nation, presents EPA's Janet McCabe with the 2015 Status of Tribal Air Report at the Forum's NTAA luncheon, celebrating the accomplishment with dozens of air colleagues.



NTAA Breakout sessions, such as Tony Basabe's session on diesel pollution, cover a broad range of air-quality topics to enhance the knowledge and expertise of both seasoned and novice air staff.



BLAIR - from page 3

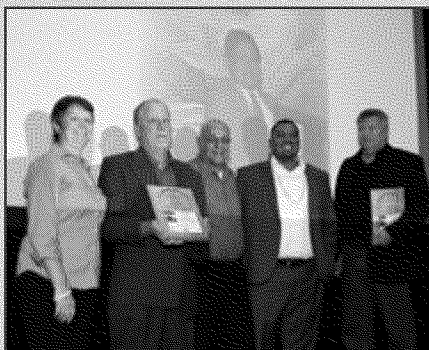
He tensed. In typical fashion, he dove into the job with energy and dedication. The Gila River Indian Community is home to more than 50 industrial facilities, and at the time regulations were few. Part of his early work involved developing a needs assessment, an emissions inventory, and a scoping document to determine the shape of GRIC's regulatory program. That led to GRIC developing a Tribal Implementation Plan and obtaining Treatment as a State status—both of which Dan counts as major accomplishments during his eighteen years with the tribe.

The tribe's TIP would take twelve years to shepherd through the federal gauntlet, breaking extensive new ground along the way in the complex regulatory relationship between tribes, states, EPA and nearby localities.

In addition to helping shape one of the nation's largest tribal air programs, another of Dan's noteworthy achievements was helping to move GRIC out of non-attainment status for ozone and CO and into "unclassifiable/attainment" status, reflecting a fairer standard of treatment for a tribe located on the edge of the nation's sixth largest city.

Dan recently retired from his air work, right around the time he was nominated to share in this year's Virgil Masayesva Tribal Air Programs Excellence Awards. The honor was a fitting culmination to Dan's work both for GRIC and for tribes nationwide. His service, in addition to helping create and expand GRIC's dynamic air program, has included years of mentoring other tribal air staff as well as instructing for a number of ITEP air-quality classroom courses. Among the awards he's received during his tribal-air tenure, he shared in the GRIC Dept. of Environmental Quality's 2008 EPA Tribal Air Excellence Award.

But winning the Virgil Masayesva Award, he says, is his proudest accomplishment: "It's an absolute honor to receive this award. Virgil was my golf buddy; he was my friend. Of all the awards I've ever wanted to get, this is the best for me, because it's personal."



Left to right: Ondrea Barber, Dan Blair, Farshid Farsi, Will Antone, Randy Ashley. Behind the group is an image of Virgil Masayesva, ITEP's co-founder and the man for whom the award is named.

ASHLEY - from page 3

tribal co-chair of the Western Regional Air Partnership and former chair of the National Tribal Air Association; he has served as an instructor for numerous ITEP air courses and has provided extensive support to ITEP's Tribal Air Monitoring Support (TAMS) Center; and he serves as a planning committee member for the National Tribal Forum on Air Quality.

Randy attended Montana State University, majoring in Electrical and Electronic Engineer Technology. He previously worked for the tribes as a juvenile probation officer, electronics specialist, hotshot (firefighting) crew member, and as a contractor helping to establish internet connectivity for several regional tribes.

He emphasizes the value of networking to build expertise. In his early days, he says, the tribal air community was tight-knit and highly engaged—a situation he hopes remains the rule. "People were very dedicated. We would go to a conference and talk shop all day, then when it was over we would meet somewhere and talk more shop. We were in constant communication and were really well networked."

He notes that he was among those on the Nation Tribal Forum planning committee in recent years who successfully pushed to increase the Forum's emphasis on networking sessions. "That's so valuable. When I got stuck I'd call someone. For me, usually it was Dan Blair. I could have called anyone in the group. But often my first thought when I had a problem would be, 'Dan has an answer for this.' Everyone needs to find themselves a Dan Blair. I'll miss Dan now that he's retired. I'd call him, but I don't want to interrupt his fishing."

Randy continues to draw on his colleagues for ideas and assistance, he says, though these days his networking community is made up of a smaller—though well seasoned—group of fellow air pros.

He offers his views on the evolution of the tribal air community: "There's so much more expertise out there now. Look at this conference [this interview took place at the NTFAQ]... all these really sharp people in the field." He says despite flat funding for tribal air over the past decade, the community continues to do "exceptional work."

Randy says winning the Virgil Masayesva Award represents one of his proudest achievements, though he describes his reaction when he learned he'd won the award with his typical modesty: "I never expected to win this. I think about all the other people who are more deserving, and I find it hard to be put in their place. I'm honored to be a co-recipient with Dan Blair. I think the world of Dan."

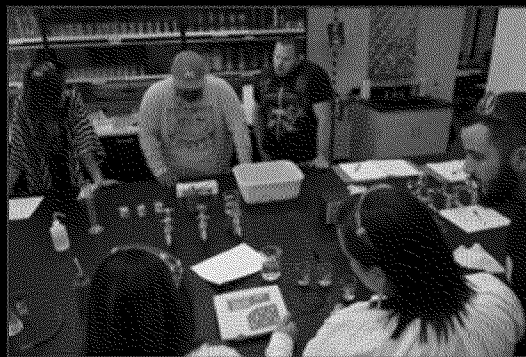
Randy downplays his long list of accomplishments in similar fashion: "I never really thought about how much there was to do. I never had time to think about it. I just went out and did it."

Introduction to Tribal Air Quality:

Capacity Building from the Ground Up

In July, 17 new tribal air techs got down to basics.

T



see INTRO on page 11

Basics of ITEP's Basic Air Course: A Conversation with Pat Ellsworth

Pat Ellsworth has been the lead instructor for all of ITEP's Introduction to Tribal Air Quality classroom training courses. Here she discusses some of the basics of our most basic air-quality training course:

How long have you been involved in teaching *Introduction to Tribal Air Quality*?

I taught the first *Intro* course in March of 1994, and I've taught all of them since—about thirty times. I really enjoy teaching folks who are new to air quality, and seeing some of the light bulbs light up. I also like the fact that *Intro* has some lab activities in it, which is a part of my background. And people really enjoy those activities.

Who should consider taking this course?

Our target audience is people who are new to air quality and who also don't have a lot of background in science and engineering. If a person does have a science background, we will still give them the option to attend the course. Some people say, 'Well, I got my science degree 15 years ago,' and there's a lot they don't remember. So that person is fine to attend the course.

If someone has a strong background in science or engineering that's fairly recent, often they will choose to skip this course and enter into Level 2 training [an "intermediate level that includes courses such as *Air Pollution Technology* and *GIS for Air Quality Applications*].



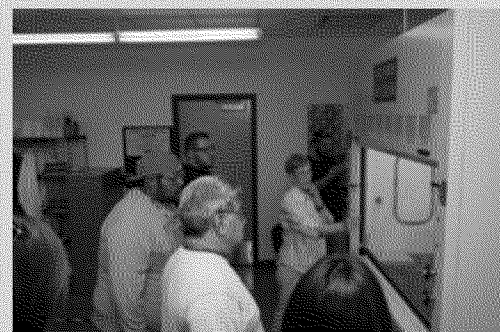
Coordinator, Dr.
Pat Ellsworth.

What can people expect to walk away with after attending an *Intro* course?

This course is laying the groundwork. No one who is new to air quality can walk out of an *Intro* course and start an air program; it's the beginning of their training and their capacity-building. In the *Intro* course we touch on many aspects of air quality, including indoor air and climate change. We don't go deeply into anything; this is really a survey of what air quality involves. I think it gives people a broad overview of the whole field of air quality work. And they might find aspects that are particularly interesting and relevant to their tribal situation.

How do you choose locations for the training?

Because *Intro* has a lab component, we are somewhat constrained about where we can take it. We've taught the course at a number of places besides NAU, but typically those were locations where we had access to a lab. So that's part of the constraint. Our tightening budget is a factor, too.



Pat Ellsworth instructs students on the use of a fume hood for an acid-rain experiment.

What has changed over time in terms of the material attendees learn in the course?

The instructional approach that we developed for the *Intro* course would become a model for most of our other ITEP courses, including the tribal focus we try to take, use of tribal instructors whenever possible, and the mix of lecture and hands-on learning activities. The basic structure of the course is pretty much as it's been all along, but we continually update our presentations and activities to reflect new scientific research and new regulations from EPA. We've added IAQ and climate change to the curriculum. The original *Intro* course dealt strictly with outdoor air, ambient air. Then we started realizing over the years how important indoor air is, and we felt like we needed to put that into the course.

What do participants do in the lab portion of *Intro* training?

We try to give people an experiential sense of what pH is. And then we make the connection between that and the air pollutants that cause acid rain. Also, one of the things that is important in this work is calibration. Some people have done that before, but for others it's a new concept. But there are so many aspects of environmental work where instruments need to be calibrated, so we calibrate our pH meters as an introduction to that skill.

How often is the course offered?

In the early years it was taught twice a year. Over the last few years we've stretched that out a little, so rather than putting six months between each offering we're now putting about nine or 10 months between offerings, partly due to budget constraints and also because of a slight drop in demand in recent years—though the course is always in demand.

Will you continue to serve as the lead instructor for this course?

I have never gotten tired of teaching *Intro*.

Climate Change Adaptation:

Acknowledging the Reality, Addressing the Impacts

A March 2015 Gallup Poll revealed that over 99% of climate scientists now agree that climate change is real and human-caused. Many scientists believe the threat is growing more severe, with more-frequent and stronger storm events, extended drought conditions and other impacts either caused or aggravated by global warming. The U.S. military has already determined that climate change represents a danger to the nation's security, and many cities and counties have begun developing strategies to adapt to its effects.

Year to year the warming of the planet, with all its complex local and regional impacts, damages the health, cultures and economies of people worldwide. As President Obama recently demonstrated during a September trip to our northernmost state, Alaska Natives are among the world's hardest hit. Tribes suffer particularly serious impacts from the changing climate due to their geographic location and their close connections to the land and water.

And so the difficult question arises: What can tribes do to minimize the negative impacts of climate change?

That's the topic of a classroom course that Sue Wotkyns, ITEP's Climate Change Program Manager, has taken on the road over the past five years. In June, accompanied by experts in climate, ecosystems and adaptation, she presented the course at the Bishop Paiute Reservation in central California.

Nestled in a valley between the towering White and Sierra

Nevada mountains,

the 875-acre Bishop

Paiute Reservation

is home to one of

the smallest tribes

in the U.S. Despite

its diminutive size,

the Bishop Paiute

Tribe is working

diligently to maintain

its traditional cultural

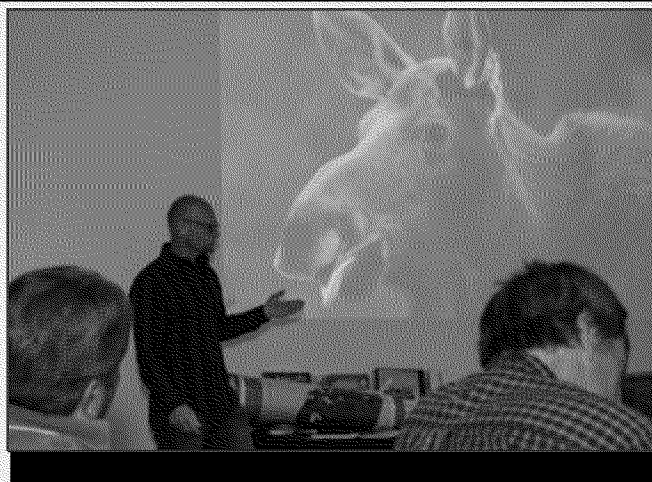
practices. That effort

includes training its



class gathers at 9000+ feet elevation Planning after examining climate impacts on Sierra Nevada biomes.

youngest members on the Paiute language and cultivating traditional plants and their seeds for food and medicine. Climate change threatens to become one of their biggest obstacles in that effort as it stresses native plants and impacts their economy by contributing



for the Grand Portage Band of Lake Superior Chippewa in Minnesota.

to drought and adding disruptive temperature rise to a once-stable ecosystem. Given their willingness to confront the climate challenge head-on despite the challenges, Bishop made a fine host for ITEP's most-recent *Climate Change Adaptation Planning* course.

The three-day training drew members from the host tribe and from Native communities throughout the western U.S. Nearly two dozen people attended the course, which took place at the Bishop Paiute Cultural Center. The facility and its grounds house meeting and education space, a museum of Paiute culture, and a traditional garden/seed banking plot and sustainable-energy demo projects on the grounds.

A tour of the grounds and the tribe's sustainability projects was a highlight of the course.

Instructors

for the three-

day course

included

Dave Pierce

of the Scripps

Oceanographic Institute at the University of California-San Diego;

Stefan Sommer, Director of the Colorado Plateau Biodiversity

Center at Northern Arizona University; Seth Moore, a wildlife

biologist and researcher with the Grand Portage Band of Lake

Superior Chippewa in Minnesota; Tamara Wall of the Western

Regional Climate Center, and Sue Wotkyns, manager of ITEP's

Climate Change program. The Bishop Paiute Tribe also provided

support from their environmental staff and regional U.S. Forest

Service partners.

The first day of the course featured a talking circle in which participants voiced their thoughts and feelings on climate change,



Program Manager Sue Wotkyns of ITEP presents a survey of adaptation strategies that tribes around the nation are presently pursuing.

see CLIMATE on page 12



Tribal Solar Working Group Explores Clean Energy Options for Tribal Communities

Arizona's 22 tribes are unique entities, but one of their commonalities is access to abundant sunshine. Finding ways to tap into that clean, free source of energy has been the aim of a series of gatherings sponsored by ITEP's Tribal Clean Energy Resource Center.

From November 2014 through June 2015, TCERC sponsored a series of Tribal Solar Working Group events at tribal and other locations in Arizona and Nevada.



More than 60 attendees attended a working group meeting in Phoenix, AZ.



Leupp Family Farm manager, Tyrone Thompson, describes the solar-water-pumping operation on the Navajo Nation farm co-op.

The gatherings were designed to inform and educate tribal members on the feasibility, technology, and application of solar energy for their communities. Tribal members, as well as private, public

and nonprofit energy experts, lent their expertise to examine solar generation from micro-scale, single-home uses to the largest solar-energy generating station in the U.S. The events were typically structured with one day in the classroom, where experts reviewed solar project development from every angle—the technical side, environmental impacts, funding, public outreach, and more. The second day featured a field trip to solar facilities large and small.

Discussions are underway to continue the solar workshops. Stay tuned for more information on the Tribal Solar Working Group program.



School explains the master controls for the school's off-grid energy system.

Group members at Solana, the nation's largest solar facility.



see INTRO on page 13

scale of the problem and some of the sticky political issues that must be navigated when



communicating climate change information to others. By the end of the session, some level of consensus was formed: each of us must do what we can for our own communities. In doing so, that effort might extend to the larger world around us.

The training began with an introduction to climate-change impacts, emphasizing conditions in the Great Basin region but extending to other parts of the country. The first speaker, Dr. Dave Pierce of the Scripps Institute at the University of California San Diego, presented a compilation of up-to-date climate data and noted the difficulty in relaying some of that data to the average person. Although the vast majority of climate scientists agree on the reality and cause of global warming, he told the class, only about 50% of citizens accept the science. He suggested the problem is largely due to a drumbeat of counter-factual information promulgated by the "denier media," along with the need many have to agree with the accepted views of their social group.

Regardless of political pressures to deny or downplay the issue, the facts are unequivocal. The planet has been warming pretty much without a pause since the 1880s. Variable weather patterns

Course attendee Pah-Tu Pitt, who works for the Confederated Tribes of the Warm Springs Reservation as an Environmental Specialist and Education Coordinator, says climate-linked problems that the tribes face are perceived to be many, including a decrease in snowpack and stream flows, more bugs and weeds, an increase in wildfires and a shorter season for gathering traditional plants.



The good news, she says, is that the tribal climate change workgroup with which she's associated has found that "we actually have a lot of good conservation efforts to work with. We have an integrated resource management plan, so a lot of the work we do will plug into that. It's already provided a lot of good guidance, and it was signed off by the tribal leadership and is something the people say they really want. The way tribes have to work with the dominant market system, we can lose track of what's important. But we really have a strong base to work with, and that's really exciting."

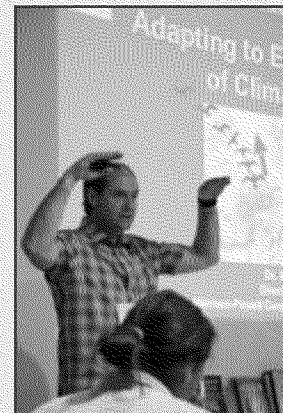
in the U.S. tied to worldwide warming, Dr. Pierce explained, will likely include a steady temperature rise, notably in the nation's interior (with variations that will include occasional cold snaps). The data suggest, however, that overall number of cold waves will decrease, and that intense heat waves will grow in frequency, such as a 2003 spike in Europe that killed some 70,000 people. Similar events of lesser intensity have repeated in years since. Flooding, drought, and other problems are also likely to increase in many parts of the world, though some areas will actually grow wetter and even colder, due to the complex interactions between atmospheric heat, wind patterns, and the movement of ocean currents.

The science paints an unsettling picture of likely climate impacts should fossil fuel continue at the present rate; however, Dr. Pierce noted, potential solutions—or at least mitigating interventions—can reduce the impacts. With that he moved on to what would be the thrust of the course: exploring ways to adapt to present and future climate change.

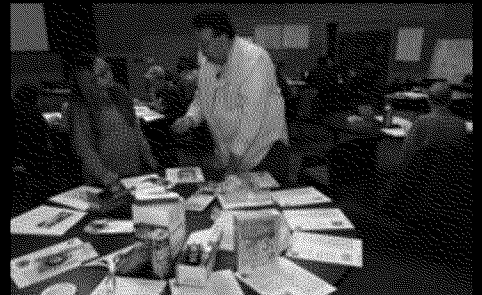
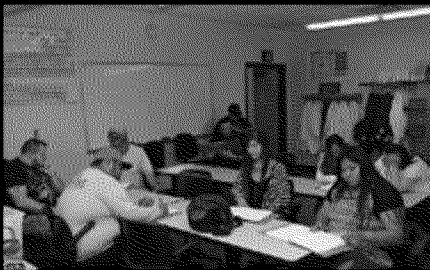
Attendees participated in a variety of adaptation-related exercises and discussions and learned more about adaptation strategies. That including a comprehensive discussion led by NAU ecology professor Dr. Stefan Sommer on ecosystem impacts of climate change in the Southwest, and ways that ecological groups are using scientific research to find ways to counter climate impacts. Among the adaptation strategies he described is an innovative network of tree nurseries in place around the Western U.S. that maintain trees bearing different genotypes. The trees can be hand-selected to grow successfully in a variety of conditions.

Sue Wotkyns, who manages ITEP's Climate Change program, presented on efforts by a variety of tribes across the nation to address climate impacts on their communities. A number of tribes have taken up the adaptation challenge, and their innovative approaches to the problem can be models for other tribes who choose to take action now, even for problems that haven't yet materialized.

Dr. Seth Moore, who heads the Biology and Conservation departments for the Grand Portage Band of Huron Indians in Minnesota, conducts research on moose populations in and around the Grand Portage Reservation. He presented on that research, demonstrating ways in which careful science can be employed to determine climate impacts and help create adaptive strategies to help preserve



Stefan Sommer describes the complex web of interactions among species impacted by climate change.



CLIMATE - from page 11

Natural resources of value to tribal cultures and economies.

Course attendees also explored approaches to community outreach and education and learned more about ecological restoration efforts in which tribes and nontribal communities are engaged.

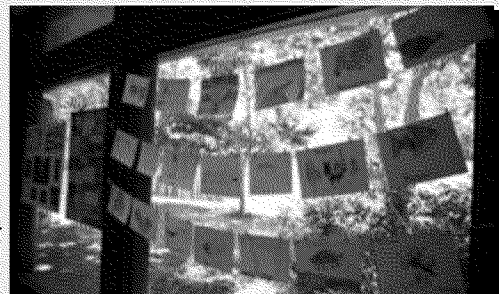
Field trips in and around the Bishop Paiute Reservation included an outing to the nearby Sierras and walking tours of the Bishop Paiute Tribe's sustainability and traditional food programs (led by attendee/Bishop environmental director Bryanna Vaughan). The outings provided attendees with a look at efforts by the Bishop Tribe's sustainability programs, including a traditional-plant garden, native plant cultivation around the reservation, and a Paiute-language program in which Bishop children learn the names and uses of traditional plants.

A field trip into the Sierra Nevada Range west of Bishop offered attendees a wider glimpse of ecosystem stresses that the U.S.

Forest Service and partners, including the tribe, are addressing. That effort includes monitoring key species and using the data to develop adaptation strategies.

The course ended with a second talking circle, during which attendees discussed what they'd learned and explored how they might carry their new knowledge back to their communities. Several attendees said that, despite the magnitude of the climate challenge, they would leave the course with fresh resolve to engage a problem that is big, but also too big to ignore.

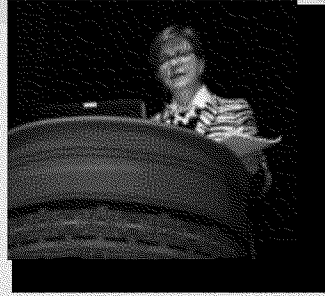
As part of Bishop's language program, tribal youth draw pictures of plants and animals important to the tribe and learn their Paiute names.



NTFAQ Gallery



Dr. Janice Nolen of the American Lung Association describes health impacts of cigarette smoke and other air pollutants.



Farshid Farsi on station at the TAMS booth.



EPA's Jed Harrison and Mehرداد Khatibi (center) robe.



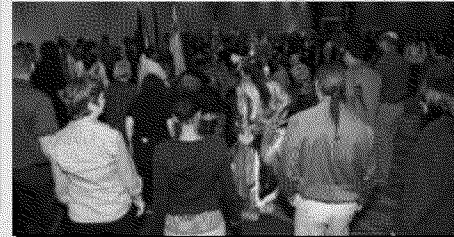
The Nottawaseppi Tribe's hotel-casino complex provided a comfortable Forum experience.



Forum participants browse information booths and chat with colleagues.



Forum attendees participate in traditional round dance to the beat of Southern Straight Drum.



Longtime colleagues Catalene Cummings and Dan share Forum moment.



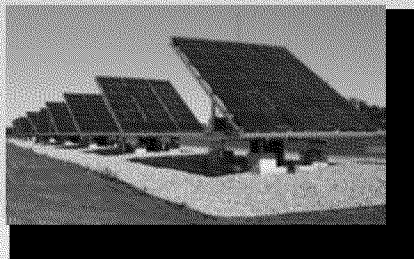
EcoCafe booth.



Nottawaseppi Tribal Council Sargeant-at-Arms, Tony Day, leads an honor guard to open and close the Forum.



smile from Sr. Indian Program Manager, at childrens.



Nottawaseppi hotel and casino.



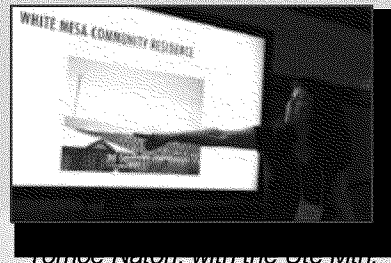
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